

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

SOLAS OLED LTD.,	§	
	§	
Plaintiff,	§	
	§	
v.	§	Civil Action No. 2:19-cv-00152-JRG
	§	
SAMSUNG DISPLAY CO., LTD.,	§	
SAMSUNG ELECTRONICS CO., LTD.,	§	<b>JURY TRIAL DEMANDED</b>
and SAMSUNG ELECTRONICS	§	
AMERICA, INC.,	§	
	§	
Defendants.	§	

**DEFENDANTS SAMSUNG DISPLAY CO., LTD., SAMSUNG ELECTRONICS CO.,  
LTD., AND SAMSUNG ELECTRONICS AMERICA, INC.’S  
ANSWER AND COUNTERCLAIMS TO PLAINTIFF SOLAS OLED LTD.’S  
AMENDED COMPLAINT FOR PATENT INFRINGEMENT**

Defendants Samsung Display Co., Ltd. (“SDC”), Samsung Electronics Co., Ltd. (“SEC”), and Samsung Electronics America, Inc. (“SEA”) (collectively, “Defendants” or “Samsung”), by and through their undersigned counsel, hereby answer the Amended Complaint for Patent Infringement filed by Plaintiff Solas OLED Ltd. (“Plaintiff” or “Solas”) (Dkt. 15). Samsung denies the allegations of the Amended Complaint to the extent such allegations are not expressly admitted in the following paragraphs.

**Plaintiff Solas OLED and the Patents-in-Suit.**

1. Samsung lacks knowledge or information sufficient to form a belief as to the truth of the allegations contained in Paragraph 1 and thus denies those allegations.

2. Samsung admits that U.S. Patent No. 6,072,450 (“the ’450 patent”) is entitled “Display Apparatus” and appears on its face to have issued on June 6, 2000. Samsung admits that, upon information and belief, Exhibit 1 to the Amended Complaint appears to be a copy of the ’450 patent. Samsung lacks knowledge or information sufficient to form a belief as to the truth of Solas’

ownership of the '450 patent and thus denies those allegations. Samsung denies any and all remaining allegations in Paragraph 2.

3. Samsung admits that U.S. Patent No. 7,446,338 (“the ’338 patent”) is entitled “Display Panel” and appears on its face to have issued on November 4, 2008. Samsung admits that, upon information and belief, Exhibit 2 to the Amended Complaint appears to be the first page of the ’338 patent. Samsung lacks knowledge or information sufficient to form a belief as to the truth of Solas’ ownership of the ’338 patent and thus denies those allegations. Samsung denies any and all remaining allegations in Paragraph 3.

4. Samsung admits that U.S. Patent No. 9,256,311 (“the ’311 patent”) is entitled “Flexible Touch Sensor” and appears on its face to have been issued on February 9, 2016. Samsung admits that, upon information and belief, Exhibit 3 to the Amended Complaint appears to be a copy of the ’311 patent. Samsung lacks knowledge or information sufficient to form a belief as to the truth of Solas’ ownership of the ’311 patent and thus denies those allegations. Samsung denies any and all remaining allegations in Paragraph 4.

#### **Defendants and the Accused Products.**

5. SDC admits it is a corporation organized and existing under the laws of the Republic of Korea. SEC admits it is a corporation organized and existing under the laws of the Republic of Korea. SEA admits it is a corporation organized and existing under the laws of the State of New York. Samsung admits for the purposes of this action that SEA maintains places of business within this District.

6. Samsung admits that certain models of Samsung Galaxy smartphones, including the Samsung Galaxy S9, feature an active-matrix organic light-emitting diode (AMOLED) display. Samsung denies any and all remaining allegations in Paragraph 6.

7. Samsung admits that SDC manufactures and supplies displays that are incorporated into Samsung Galaxy smartphones. Samsung admits that SEC manufactures and supplies Samsung Galaxy smartphones. Samsung admits that SEA supplies Samsung Galaxy smartphones in the United States. Samsung denies any and all remaining allegations in Paragraph 7.

**Jurisdiction, venue, and joinder.**

8. Samsung states that the allegations in Paragraph 8 contain legal conclusions that require no answer. To the extent an answer is required, Samsung admits that the Complaint purports to be an action for patent infringement arising under Title 35 of the United States Code. Samsung denies that it is liable for patent infringement as alleged by Solas. Samsung does not contest that this Court has subject matter jurisdiction over Solas' claim for patent infringement.

9. Samsung states that the allegations in Paragraph 9 contain legal conclusions that require no answer. To the extent an answer is required, Samsung does not contest, for purposes of this action only, that the Court has personal jurisdiction over SEA. Samsung admits for the purposes of this action that SEA has conducted business in this District and SEA maintains a place of business within this District, but Samsung denies that it has committed any acts of patent infringement in the State of Texas or this District. Samsung denies any and all remaining allegations in Paragraph 9.

10. Samsung states that the allegations in Paragraph 10 contain legal conclusions that require no answer. Samsung denies that it is liable for patent infringement as alleged by Solas. Samsung denies any and all remaining allegations in Paragraph 10.

11. Samsung states that the allegations in Paragraph 11 contain legal conclusions that require no answer. To the extent an answer is required, Samsung does not contest, for purposes of this action only, that venue is proper in this District as to SEA, SDC, and SEC. Samsung admits

SEA has offices in Plano, Texas. Samsung denies any and all remaining allegations in Paragraph 11.

**Count 1 – Claim alleging infringement of the '450 patent.**

12. Samsung restates and incorporates by reference its answers to Paragraphs 1 through 11 as if fully set forth herein.

13. Samsung admits that the '450 patent is entitled "Display Apparatus" and appears on its face to have been issued on June 6, 2000.

14. Samsung lacks knowledge or information sufficient to form a belief as to the truth of Solas' ownership of the '450 patent and thus denies those allegations. Samsung denies any and all remaining allegations in Paragraph 14.

15. Denied.

16. Samsung states that the allegations in Paragraph 16 contain legal conclusions that require no answer. Samsung denies that it is liable for patent infringement as alleged by Solas, and denies any and all remaining allegations in Paragraph 16.

17. Denied.

18. Samsung states that the allegations in Paragraph 18 contain legal conclusions that require no answer. Samsung denies that it is liable for patent infringement as alleged by Solas. Samsung admits that the Samsung Galaxy S8 smartphone includes an OLED panel. Samsung denies any and all remaining allegations set forth in Paragraph 18.

19. Samsung admits that the '450 patent appears on its face to have been issued on June 6, 2000. Samsung admits that the '450 patent was cited by a patent examiner during the prosecution of U.S. Patent Application No. 09/755,193 (and that this application was entitled "Contact Structure of Wiring and a Method for Manufacturing the Same," published as U.S. Patent Publication No. 2001/0019129A1 on September 6, 2001, and was assigned to SEC), which issued

as U.S. Patent No. 6,885,064 on April 26, 2005 citing the '450 patent on its face (and was assigned to SDC on September 4, 2012). Samsung admits that the '450 patent was cited to the USPTO in an Information Disclosure Statement filed during the prosecution of U.S. Patent Application No. 11/107,889 (and that this application was entitled "Contact Structure of Wiring and a Method for Manufacturing the Same," published as U.S. Patent Publication No. 2005/0181582A1 on August 18, 2005, and was assigned to SEC), which issued as U.S. Patent No. 7,115,433 on October 3, 2006 citing the '450 patent on its face (and was assigned to SDC on September 4, 2012). Samsung admits that the '450 patent was cited by a patent examiner during the prosecution of U.S. Patent Application No. 11/170,158 (and that this application was entitled "Active Matrix Organic Light Emitting Display Device and Method of Fabricating the same," published as U.S. Patent Publication No. 2006/0001363A1 on January 5, 2006, and was assigned to Samsung SDI Co., Ltd.), which issued as U.S. Patent No. 7,402,950 on July 22, 2008 citing the '450 patent on its face (which was assigned to Samsung Mobile Display Co., Ltd. on December 12, 2008, which merged into SDC on July 2, 2012). Samsung admits that the '450 patent was cited by a patent examiner during the prosecution of U.S. Patent Application No. 11/284,106 (and that this application was entitled "Organic Electroluminescence Display with an Insulating Layer Selectively Formed," published as U.S. Patent Publication No. 2006/0119251A1 on June 8, 2006, and was assigned to Samsung SDI Co., Ltd.), which issued as U.S. Patent No. 7,538,481 on May 26, 2009 citing the '450 patent on its face (which was assigned to Samsung Mobile Display Co., Ltd. on December 12, 2008, which merged into SDC on July 2, 2012). Samsung admits that the '450 patent was cited by a patent examiner during the prosecution of U.S. Patent Application No. 11/480,199 (and that this application was entitled "Display Device with Reduced Number of Wires and Manufacturing Method Thereof," published as U.S. Patent Publication No. 2007/0012926A1 on

January 18, 2007, and was assigned to SEC), and that this patent application went abandoned. Samsung admits that the '450 patent was cited by a patent examiner during the prosecution of U.S. Patent Application No. 11/535,222 (and that this application was entitled "Organic Light Emitting Diode Display and Method of Manufacturing the Same," published as U.S. Patent Publication No. 2007/0096636A1 on May 3, 2007, and was assigned to SEC), which issued as U.S. Patent No. 7,990,047 on August 2, 2011 citing the '450 patent on its face (and was assigned to SDC on September 4, 2012). Samsung admits that the '450 patent was cited to the USPTO in an Information Disclosure Statement filed during the prosecution of U.S. Patent Application No. 12/805,200 (and that this application was entitled "Organic Light Emitting Diode Display," published as U.S. Patent Publication No. 2011/0012816A1 on January 20, 2011, and was assigned to SDC), which issued as U.S. Patent No. 8,587,499 on November 19, 2013 citing the '450 patent on its face. Samsung admits that the '450 patent was cited by a patent examiner during the prosecution of U.S. Patent Application No. 13/100,996 (and that this application was entitled "Organic Light Emitting Diode Display," published as U.S. Patent Publication No. 2012/0153321A1 on June 21, 2012, and was assigned to Samsung Mobile Display Co., Ltd., which merged into SDC on July 2, 2012), and that this patent application went abandoned. Samsung denies the remaining allegations set forth in Paragraph 19.

20. Denied.

21. Samsung admits that one or more defendants have knowledge about the manufacture of certain components in the Samsung Galaxy smartphones. Samsung denies any and all remaining allegations set forth in Paragraph 21.

22. Denied

23. Denied.

24. Denied.

**Count 2 – Claim alleging infringement of the '338 patent**

25. Samsung restates and incorporates by reference its answers to Paragraphs 1 through 24 as if fully set forth herein.

26. Samsung admits that the '338 patent is entitled “Display Panel” and appears on its face to have issued on November 4, 2008.

27. Samsung lacks knowledge or information sufficient to form a belief as to the truth of Solas’ ownership of the '338 patent and thus denies those allegations. Samsung denies any and all remaining allegations in Paragraph 27.

28. Denied.

29. Samsung states that the allegations in Paragraph 29 contain legal conclusions that require no answer. Samsung denies that it is liable for patent infringement as alleged by Solas. Samsung denies any and all remaining allegations in Paragraph 29.

30. Denied.

31. Samsung states that the allegations in Paragraph 31 contain legal conclusions that require no answer. Samsung denies that it is liable for patent infringement as alleged by Solas. Samsung admits that the Samsung Galaxy S8 smartphone includes a display panel. Samsung denies any and all remaining allegations set forth in Paragraph 31.

32. Samsung admits that U.S. Patent Application No. 11/235,579 appears to have been published as U.S. Patent Publication No. 2006/0066535A1 on March 30, 2006, and to have ultimately issued as the '338 patent. Samsung admits that U.S. Patent Publication No. 2006/0066535A1 was cited by a patent examiner during the prosecution of U.S. Patent Application No. 12/609,550 (and that this application was entitled “Display Apparatus Including Voltage Compensator to Compensate Common Voltage,” and was published on May 6, 2010 as U.S. Patent

Publication No. 2010/0110058, which lists SEC on its face as the assignee), which issued as U.S. Patent No. 8,514,162 on August 20, 2013, cites U.S. Patent Publication No. 2006/0066535A1 on its face, and lists SDC on its face as the assignee. Samsung admits that the '338 patent was cited by a patent examiner during the prosecution of U.S. Patent Application No. 13/268,273 (and that this application was entitled "Organic Light-Emitting Display Apparatus" and published as U.S. Patent Publication No. 2012/0280215 on November 8, 2012), which issued as U.S. Patent No. 8,816,331 on August 26, 2014, cites the '338 patent on its face, and lists SDC on its face as the assignee. Samsung denies any and all remaining allegations set forth in Paragraph 32.

33. Denied.

34. Denied.

35. Samsung admits that one or more defendants have knowledge about the manufacture of certain components in the Samsung Galaxy smartphones. Samsung denies any and all remaining allegations set forth in Paragraph 35.

36. Denied.

37. Denied.

38. Denied.

### **Count 3 – Claim alleging infringement of the '311 patent**

39. Samsung restates and incorporates by reference its answers to Paragraphs 1 through 38 as if fully set forth herein.

40. Samsung admits that the '311 patent is entitled "Flexible Touch Sensor" and appears on its face to have been issued on February 9, 2016.

41. Samsung lacks knowledge or information sufficient to form a belief as to the truth of Solas' ownership of the '311 patent and thus denies those allegations. Samsung denies any and all remaining allegations in Paragraph 41.



42. Denied.

43. Samsung states that the allegations in Paragraph 43 contain legal conclusions that require no answer. Samsung denies that it is liable for patent infringement as alleged by Solas. Samsung denies any and all remaining allegations in Paragraph 43.

44. Denied.

45. Samsung states that the allegations in Paragraph 45 contain legal conclusions that require no answer. Samsung denies that it is liable for patent infringement as alleged by Solas. Samsung admits that the Samsung Galaxy S9 smartphone includes an OLED panel. Samsung denies any and all remaining allegations set forth in Paragraph 45.

46. Samsung admits that U.S. Patent Application No. 13/284,674 appears to have been published as U.S. Patent Publication No. 2013/0106441A1 on May 2, 2013, and to have ultimately issued as the '311 patent. Samsung admits that U.S. Patent Publication No. 2013/0106441A1 was cited by a patent examiner during the prosecution of U.S. Patent Application Nos. 13/776,932 (and that this application was entitled "Flexible Touch Screen Panel and Flexible Display Device with the Same," was published as U.S. Patent Publication No. 2014/0132553A1 on May 15, 2014, and went abandoned), 14/592,276 (and that this application was entitled "Flexible Touch Screen Panel and Flexible Display Device with the Same" and published as U.S. Patent Publication No. 2015/0123926A1 on May 7, 2015), 14/248,126 (and that this application was entitled "Touch Panel, Display Apparatus, and Method of Manufacturing the Touch Panel," published as U.S. Patent Publication No. 2015/0153873A1 on June 4, 2015, and is pending), 14/457,259 (and that this application was entitled "Display Device Having a Touch Panel," was published as U.S. Patent Publication No. 2015/0220120A1 on August 6, 2015, and went abandoned), and 14/601,947 (and that this application was entitled "Flexible Circuit Board and Electronic Device Including the Same"

and published as U.S. Patent Publication No. 2016/0066411A1 on March 3, 2016), and that each of these patent applications were assigned to SDC. Samsung admits that U.S. Patent Application No. 14/592,276 issued as U.S. Patent No. 9,778,697 on October 3, 2017, which cites U.S. Patent Publication No. 2013/0106441A1 on its face. Samsung admits that U.S. Patent Application No. 14/601,947 issued as U.S. Patent No. 10,285,263 on May 7, 2019, which cites U.S. Patent Publication No. 2013/0106441A1 on its face. Samsung admits that the '311 patent was cited to the USPTO in an Information Disclosure Statement filed during the prosecution of U.S. Patent Application No. 14/601,947, and U.S. Patent No. 10,285,263 cites the '311 patent on its face. Samsung admits that U.S. Patent Publication No. 2013/0106441A1 was cited to the USPTO in an Information Disclosure Statement during the prosecution of U.S. Patent Application Nos. 15/073,515 (titled "Sensing Unit, Flexible Device, and Display Device," published as U.S. Patent Publication No. 2016/0203763A1 on July 14, 2016, and issued on May 1, 2018 as U.S. Patent No. 9,959,811, which lists U.S. Patent Publication No. 2013/0106441A1 on its face), 15/245,785 (titled "Flexible Touch Screen Panel and Flexible Display Device with the Same," published as U.S. Patent Publication No. 2016/0364048A1 on December 15, 2016, and issued on September 4, 2018 as U.S. Patent No. 10,067,623, which lists U.S. Patent Publication No. 2013/0106441A1 on its face), and 15/709,575 (titled "Flexible Touch Screen Panel and Flexible Display Device with the Same," published as U.S. Patent Publication No. 2018/0004253A1 on January 4, 2018, and issued on July 17, 2018 as U.S. Patent No. 10,025,356, which lists U.S. Patent Publication No. 2013/0106441A1 on its face), and that each of these patent applications were assigned to SDC. Samsung denies the remaining allegations set forth in Paragraph 46.

47. Denied.

48. Denied.

49. Samsung admits that one or more defendants have knowledge about the manufacture of certain components in the Samsung Galaxy smartphones. Samsung denies any and all remaining allegations set forth in Paragraph 49.

50. Denied.

51. Denied.

52. Denied.

53. Denied.

**Jury Demand.**

54. No response to Solas' demand of trial by jury is necessary.

**Relief Requested.**

No response to the prayer for relief is necessary. To the extent a response is required, Samsung denies any allegations contained in the prayer for relief, and denies that Solas is entitled to any of the requested relief.

**Affirmative and Other Defenses**

Without assuming any burden Samsung would otherwise not have, Samsung asserts the following defenses:

**FIRST DEFENSE  
(Non-infringement)**

Samsung has not directly or indirectly infringed any valid claim of the '311 patent, any valid claim of the '338 patent, or any valid claim of the '450 patent, either literally or under the doctrine of equivalents.

**SECOND DEFENSE**  
**(Invalidity)**

Each claim of the '311 patent, each claim of the '338 patent, and each claim of the '450 patent is invalid for failing to meet the requirements of patentability, including, without limitation, one or more of Sections 101, 102, 103, and/or 112 of Title 35 of the United States Code.

**THIRD DEFENSE**  
**(Prosecution History Estoppel)**

Solas' claims of patent infringement are barred, in whole or in part, by the doctrine of prosecution history estoppel to the extent Solas alleges infringement under the doctrine of equivalents.

**FOURTH DEFENSE**  
**(Equitable Doctrines)**

Solas' claims are barred, in whole or in part, by the equitable doctrines of waiver, estoppel, acquiescence, laches, and/or unclean hands.

**FIFTH DEFENSE**  
**(License and Exhaustion)**

Solas' claims of patent infringement are barred to the extent the alleged infringement is licensed, either expressly or impliedly, or otherwise authorized. Solas' claims of patent infringement are also barred to the extent that Solas has exhausted its rights and remedies as to the alleged infringement.

**SIXTH DEFENSE**  
**(Lack of Standing)**

Solas lacks standing to assert the '311 patent, the '338 patent, and the '450 patent.

**SEVENTH DEFENSE**  
**(Extraterritoriality)**

Solas' claims for patent infringement are precluded in whole or in part to the extent that any accused functionality of acts are located or performed outside the United States.

**EIGHTH DEFENSE**  
**(Limitation on Damages Under Section 286)**

Solas' claims for damages are barred to the extent Solas seeks damages beyond the applicable statute of limitations, 35 U.S.C. § 286.

**NINTH DEFENSE**  
**(Limitation on Damages Under Section 287)**

Solas' claims for damages prior to the date of notice to Samsung are barred to the extent the requirements of 35 U.S.C. § 287 have not been met.

**TENTH DEFENSE**  
**(No Basis for Injunctive Relief)**

Solas cannot show that it is entitled to injunctive relief because there exists an adequate remedy at law and Solas' claims otherwise fail to meet the requirements of such relief.

**ELEVENTH DEFENSE**  
**(No Attorneys' Fees)**

Solas cannot show that it is entitled to attorneys' fees or other relief pursuant to 35 U.S.C. § 285.

**TWELFTH DEFENSE**  
**(Unforceability Due to Inequitable Conduct)**

Upon information and belief, the '311 patent is unenforceable due to inequitable conduct, as set forth in detail below in Samsung's Seventh Counterclaim for unenforceability of the '311 patent.

**RESERVATION OF RIGHT TO ASSERT ADDITIONAL DEFENSES**

Samsung has not knowingly or intentionally waived any applicable defenses, and it reserves the right to assert and rely upon other applicable defenses that may become available or apparent throughout the course of this action. Samsung reserves the right to amend, or seek to amend, its answer, including its affirmative and other defenses.

### **COUNTERCLAIMS**

Pursuant to Federal Rule of Civil Procedure 13, Defendants and Counterclaim-Plaintiffs Samsung Display Co., Ltd. (“SDC”), Samsung Electronics Co., Ltd. (“SEC”), and Samsung Electronics America, Inc. (“SEA”) (collectively, “Samsung”) bring these Counterclaims against Plaintiff and Counterclaim-Defendant Solas OLED, Ltd. (“Solas”) and allege the following:

### **PARTIES**

1. SDC is a corporation organized and existing under the laws of the Republic of Korea, with its principal place of business at 181, Samsung-ro, Tangjeong-Myeon, Asan-City, Chungcheongnam-Do, 336-741, Republic of Korea.

2. SEC is a corporation organized and existing under the laws of the Republic of Korea, with its principal place of business at 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-742, Republic of Korea.

3. SEA is a corporation organized and existing under the laws of the State of New York with its principal place of business at 85 Challenger Road, Ridgefield Park, New Jersey 07660.

4. Upon information and belief, Solas is an Irish corporation having its address at 4-5 Burton Hall Road, Sandyford, Dublin 18.

### **JURISDICTION AND VENUE**

5. This is an action for declaratory judgment of non-infringement and invalidity of U.S. Patent Nos. 6,072,450 (“the ’450 patent”), 7,446,338 (“the ’338 patent”), and 9,256,311 (“the ’311 patent”), and for unenforceability of the ’311 patent. This Court has subject matter jurisdiction over these counterclaims pursuant to 28 U.S.C. §§ 1331, 1338(a), 1367(a), 2201, 2202.

6. Venue is proper in the Eastern District of Texas under 28 U.S.C. §§ 1391 and 1400, as a result of Solas having filed this action in this District. By filing its Complaint in this District, Solas has consented to personal jurisdiction and venue.

### **BACKGROUND**

7. On May 2, 2019, Solas filed suit against Samsung, alleging infringement of the '311 patent. (Dkt. 1.) On August 23, 2019, Solas filed an Amended Complaint, alleging infringement of the '450 patent, the '338 patent, and the '311 patent. (Dkt. 15.)

8. In its Amended Complaint (Dkt. 15), Solas alleges that it is the owner of the '450 patent, the '338 patent, and the '311 patent.

9. An actual, substantial, and continuing justiciable controversy, within the meaning of 28 U.S.C. §§ 2201 and 2202, exists between Solas and Samsung concerning the infringement and validity of the '450 patent, the '338 patent, and the '311 patent, and of the unenforceability of the '311 patent. This controversy is of sufficient immediacy and reality to warrant the issue of a declaratory judgment.

### **FIRST COUNTERCLAIM** **(NON-INFRINGEMENT OF '450 PATENT)**

10. Samsung incorporates Paragraphs 1 through 9 of its Counterclaims as if fully set forth herein.

11. The '450 patent expired on or about November 21, 2017.

12. Samsung has not infringed and is not infringing, either directly or indirectly, any valid and enforceable claims of the '450 patent.

13. Samsung is entitled to a declaratory judgment that it does not infringe any valid and enforceable claims of the '450 patent.

**SECOND COUNTERCLAIM**  
**(INVALIDITY OF '450 PATENT)**

14. Samsung incorporates Paragraphs 1 through 13 of its Counterclaims as if fully set forth herein.

15. Each claim of the '450 patent is invalid for failure to comply with the requirements of patentability set forth in the patent statutes, including 35 U.S.C. §§ 101, 102, 103, and/or 112.

16. Samsung is entitled to a declaratory judgment that the claims of the '450 patent are invalid.

**THIRD COUNTERCLAIM**  
**(NON-INFRINGEMENT OF '338 PATENT)**

17. Samsung incorporates Paragraphs 1 through 16 of its Counterclaims as if fully set forth herein.

18. Samsung has not infringed and is not infringing, either directly or indirectly, any valid and enforceable claims of the '338 patent.

19. Samsung is entitled to a declaratory judgment that it does not infringe any valid and enforceable claims of the '338 patent.

**FOURTH COUNTERCLAIM**  
**(INVALIDITY OF '338 PATENT)**

20. Samsung incorporates Paragraphs 1 through 19 of its Counterclaims as if fully set forth herein.

21. Each claim of the '338 patent is invalid for failure to comply with the requirements of patentability set forth in the patent statutes, including 35 U.S.C. §§ 101, 102, 103, and/or 112.

22. Samsung is entitled to a declaratory judgment that the claims of the '338 patent are invalid.



**FIFTH COUNTERCLAIM**  
**(NON-INFRINGEMENT OF '311 PATENT)**

23. Samsung incorporates Paragraphs 1 through 22 of its Counterclaims as if fully set forth herein.

24. Samsung has not infringed and is not infringing, either directly or indirectly, any valid and enforceable claims of the '311 patent.

25. Samsung is entitled to a declaratory judgment that it does not infringe any valid and enforceable claims of the '311 patent.

**SIXTH COUNTERCLAIM**  
**(INVALIDITY OF '311 PATENT)**

26. Samsung incorporates Paragraphs 1 through 25 of its Counterclaims as if fully set forth herein.

27. Each claim of the '311 patent is invalid for failure to comply with the requirements of patentability set forth in the patent statutes, including 35 U.S.C. §§ 101, 102, 103, and/or 112.

28. Samsung is entitled to a declaratory judgment that the claims of the '311 patent are invalid.

**SEVENTH COUNTERCLAIM**  
**(UNENFORCEABILITY OF '311 PATENT)**

29. Samsung incorporates Paragraphs 1 through 28 of its Counterclaims as if fully set forth herein.

30. The '311 patent is unenforceable based on the inequitable conduct of the named inventors of the '311 patent, the attorneys responsible for prosecuting the application that led to the '311 patent, and the Atmel employees responsible for supervising the prosecution of the application that led to the '311 patent (collectively, the "Applicants").

31. Each of these Applicants had individual duties of candor and good faith to the USPTO, including an obligation to disclose to the USPTO all information known to them that was material to the patentability of the application that led to the '311 patent.

32. In particular, Applicants, including named inventors Esat Yilmaz and Jalil Shaikh and patent prosecution counsel Chad D. Terrell, failed to disclose (at least) U.S. Patent No. 7,884,808 (“the Joo Patent”) and U.S. Patent Publication No. 2010/0045632 (the “Yilmaz Publication”) to the USPTO (specifically, to Examiners Raul Rios Russo and Vincent Q Nguyen, who signed the Office Action allowing the '311 patent to issue) during prosecution of the application that led to the '311 patent.

33. At least Mr. Yilmaz, Mr. Shaikh, and Mr. Terrell were aware of the Joo Patent during the prosecution of the application that led to the '311 patent.

34. At least Mr. Yilmaz and Mr. Terrell were aware of the Yilmaz Publication during the prosecution of the application that led to the '311 patent.

35. The Joo Patent and Yilmaz Publication prior art references are material to patentability because in combination they disclose each of the limitations of the independent claims of the '311 patent (as discussed in more detail below).

36. In particular, the Joo Patent expressly disclosed the limitation that resulted in allowance of the '311 patent, “the substantially flexible substrate and the touch sensor are configured to wrap around one or more edges of a display,” which is found in both independent claims of the '311 patent.

37. The Yilmaz Publication expressly disclosed the remaining limitations of the independent claims.

38. But for the failure of Applicants to disclose the Joo Patent and the Yilmaz Publication to the USPTO (and, in particular, to Examiners Russo and Nguyen, who allowed the '311 patent to issue), the USPTO would not have allowed the claims of the '311 patent to issue.

The Applicants Failed to Disclose U.S. Patent No. 7,884,808 ("the Joo Patent"), Among Other Pertinent & Material Prior Art

*The Joo Patent Is Prior Art*

39. The Joo Patent was filed on August 28, 2007 and issued on February 8, 2011, and therefore is prior art to the '311 patent under 35 U.S.C. §§ 102(a) and (e).

*The Joo Patent Disclosed the Claim Limitation that Resulted in Allowance of the '311 Patent*

40. As noted above in Paragraph 36 of Samsung's Counterclaims, the Joo Patent expressly disclosed the limitation that resulted in allowance of the '311 patent, "the substantially flexible substrate and the touch sensor are configured to wrap around one or more edges of a display," which is found in both independent claims of the '311 patent.

*The Applicants Were Aware of the Joo Patent's Teachings During Prosecution*

41. U.S. Patent Application No. 13/198,579 ("the '579 application"), in which the Joo Patent reference was cited and applied in a rejection by Examiner Sejoon Ahn, was co-pending at the USPTO during the prosecution of the '311 patent.

42. The '579 application, like the '311 patent, listed Esat Yilmaz and Jalil Shaikh as named inventors, and Atmel Corporation as its assignee.

43. Like the '311 patent, the '579 application featured Chad D. Terrell as the prosecuting attorney of record.

44. The co-pending '579 application was repeatedly cited and applied in double-patenting rejections of the claims of the application that led to the '311 patent by Examiner Raul Rios Russo (on November 7, 2013, February 26, 2014, July 15, 2014, November 3, 2014, and

March 19, 2015) on the grounds that the claims of the '311 patent were not patentably distinct from those of the '579 application.

45. Indeed, the claims of the '579 application included a substantially similar limitation to the limitation added to the independent claims of the '311 patent that resulted in its allowance: “the substantially flexible substrate and the touch sensor are configured to wrap around one or more edges of a display.”

46. For example, following an August 24, 2015 amendment by Applicants to the claims of the '579 application signed by Chad D. Terrell, independent claim 1 of the '579 application recited “a substantially flexible substrate configured to bend at an edge between a first surface and a second surface of a device, the edge comprising an angle of deviation between the first and second surfaces of at least approximately 45°,” and “a touch sensor disposed on the substantially flexible substrate and configured to bend with the substantially flexible substrate at the edge between the first and second surfaces, the touch sensor comprising drive or sense electrodes, each drive or sense electrode made of flexible conductive metal mesh, the flexible conductive metal mesh forming each drive or sense electrode configured to bend with the substantially flexible substrate at the edge between the first and second surfaces.”

47. During prosecution of the '579 application, Examiner Ahn cited multiple different prior art references that disclosed the above-mentioned claim limitation, including the Joo Patent.

48. The Joo Patent was cited by Examiner Ahn and applied in a rejection in the '579 application on September 11, 2015.

49. In the September 11, 2015 Office Action in which the Joo Patent was cited and applied in a rejection in the '579 application, Examiner Ahn noted that the Joo Patent taught an

“electrode [that] is disposed at the edge so as to receive a touch input at the sharper edge of the touch input device.”

50. In a response filed on December 11, 2015 in the '579 application, prosecuting attorney Chad D. Terrell acknowledged that the Joo Patent discloses “a touch input portion that includes an upper touch portion and a side touch portion” and “that ‘[t]he upper touch portion 106 . . . generates input by touching a key display portion displayed on the display unit’ and ‘the side touch portion 108 . . . is formed at the side surface portion . . . to generate input different than that generated by the upper touch portion.’”

51. Accordingly, the Joo Patent reference cited by the Examiner of the '579 application (Examiner Ahn) on September 11, 2015 to Chad D. Terrell (the prosecuting attorney responsible for both the '579 application and the '311 patent), as well as to Esat Yilmaz and Jalil Shaikh (the named inventors of both the '579 application and the '311 patent) expressly disclosed the only claim limitation of the '311 patent that was missing from the prior art cited by the Examiner of the '311 patent (Examiner Russo): “the substantially flexible substrate and the touch sensor are configured to wrap around one or more edges of the display.”

52. The application that led to the '311 patent did not receive a Notice of Allowance until September 24, 2015, and Applicants did not pay the issue fee for the '311 patent until December 22, 2015.

53. Even after receiving the office action in which Examiner Ahn cited the Joo Patent in a rejection of the '579 application on September 11, 2015, Chad D. Terrell (the patent prosecutor responsible for both the '579 application and the '311 patent during the period between September 11, 2015 and December 22, 2015), Esat Yilmaz and Jalil Shaikh (named inventors on both the '311 patent and the '579 application), and the other Applicants did not disclose the Joo Patent to

the examiner of the application that led to the '311 patent (Examiner Russo), despite their individual duties of candor and good faith to the USPTO, including an obligation to disclose to the USPTO all information known to them that was material to the patentability of the '311 patent.

54. During that period between September 11, 2015 (the issuance of the office action citing the Joo patent in the '579 application) and December 22, 2015 (the payment of the issue fee for the '311 patent), Applicants filed a response in the '579 application on December 11, 2015, signed by Chad D. Terrell, that analyzed and discussed the teachings of the Joo Patent that disclosed the limitation that had resulted in allowance of the '311 patent ("the substantially flexible substrate and the touch sensor are configured to wrap around one or more edges of the display").

*The Applicants Were Aware of Other Material Prior Art Cited During the Prosecution of the '579 Application*

55. U.S. Patent Application Publication No. 2011/0253668 to Winoto et al. ("Winoto") was filed on March 23, 2011 and published on October 20, 2011, and therefore is prior art to the '311 patent under 35 U.S.C. §§ 102(a) and 102(e).

56. The examiner of the '579 application (Examiner Ahn) applied Winoto in a rejection of the '579 application in an August 22, 2014 Office Action, stating that "Winoto teaches [that] a touch screen [that] comprises metal nanowires comprises flexible metal nanowires."

57. U.S. Patent Application Publication No. 2008/0180399 to Cheng ("Cheng") was filed on January 31, 2007 and published on July 31, 2008, and is therefore prior art to the '311 patent under 35 U.S.C. §§ 102(a), 102(b), and 102(e).

58. The examiner of the '579 application (Examiner Ahn) applied Cheng in a rejection of the '579 application in an April 23, 2015 Office Action, stating that "Cheng teaches flexible conductive metal mesh . . . configured to bend with the substantially flexible substrate at the edge between the first and second surfaces."

*The Applicants Failed to Disclose the Joo Patent and Other Material Prior Art*

59. Upon information and belief, Applicants failed to disclose the Joo Patent prior art reference, as well as other prior art applied by the Examiner of the '579 application (Examiner Ahn) in rejections during prosecution of the '579 application that was material and pertinent to the claimed subject matter of the '311 patent (such as (1) Cheng and (2) Winoto), to the USPTO (and, in particular, Examiners Russo and Nguyen), with the intent to deceive the USPTO (and, in particular, Examiners Russo and Nguyen).

60. Applicants' withholding of the Joo Patent prior art reference during the prosecution of the '311 patent, as well as Applicants' withholding of other prior art applied by the Examiner (Examiner Ahn) of the '579 application in rejections (such as (1) Cheng and (2) Winoto) during prosecution of the '311 patent, is evidence of a pattern or plan to deceive the USPTO (and, in particular, Examiners Russo and Nguyen), and, standing alone, is independent evidence that inequitable conduct occurred.

The Applicants Also Failed to Disclose U.S. Patent Publication No. 2010/0045632 (the "Yilmaz Publication")

*The Yilmaz Publication is Prior Art*

61. The Yilmaz Publication was published on February 25, 2010, and lists Atmel Corporation (the assignee of the application that led to the '311 patent during that application's prosecution) as the assignee, and Esat Yilmaz (the first named inventor of the '311 patent) as its first named inventor.

62. Because the Yilmaz Publication was published on February 25, 2010, more than a year before the October 28, 2011 filing date of the '311 patent, the Yilmaz Publication is prior art to the '311 patent under 35 U.S.C. § 102(b).

*The Yilmaz Publication, in Combination With the Joo Patent, Disclosed Every Claim Limitation of the '311 Patent*

63. The prior art Yilmaz Publication disclosed nearly every element of the independent claims of the '311 patent (and disclosed all elements of the independent claims as originally filed):

'311 patent independent claims 1 & 7	Yilmaz Publication
1[preamble] / 7[preamble]: "An [apparatus/device] comprising:"	"[C]apacitive touch sensor with a display module," ¶ [0021] / "Capacitive touch screen," ¶ [0075], as well as "an apparatus incorporating the sensor," ¶ [0119].
1[a]/7[a]: "a substantially flexible substrate"	"[I]solating substrate <b>102</b> such as . . . PET," ¶¶ [0075], [0105], [0120].
1[b]/7[b]: "a touch sensor disposed on the substantially flexible substrate"	"Touch sensitive panel having a plurality of drive electrodes arranged on one side of a substrate in a first layer and a plurality of sense electrodes arranged on the other side of the substrate in a second layer," ¶¶ [0024], [0029], [0039].
1[c]/7[c]: "the touch sensor comprising [drive or sense electrodes/a plurality of capacitive nodes formed from drive or sense electrodes] made of flexible conductive material configured to bend with the substantially flexible substrate"	"Touch sensitive panel having a plurality of drive electrodes arranged on one side of a substrate in a first layer and a plurality of sense electrodes arranged on the other side of the substrate in a second layer," ¶¶ [0024], [0029], [0039].  "[E]lectrodes could be formed from an opaque conductive material such as metal e.g. copper," ¶¶ [0120], [0022], [0155] ("silver").
1[d]/7[d]: "the flexible conductive material of the drive or sense electrodes comprises first and second conductive lines that electrically contact one another at an intersection to form a mesh grid"	"[E]ach drive and/or sense electrode is made of a mesh or filigree pattern of interconnected lines of highly conductive material which collectively define each electrode." ¶¶ [0022], [0155]-[0156].
7[f]: "one or more computer-readable non-transitory storage media embodying logic that is configured when executed to control the touch sensor."	"The controller may further comprise a processing unit for calculating a position of an interaction with the sensitive area from an analysis of the sense signals obtained by applying drive signals to the drive electrodes," ¶¶ [0033]-[0035], [0094].

64. Accordingly, the Yilmaz Publication was anticipatory prior art that disclosed every limitation of the claims of the '311 patent as originally filed.



65. Indeed, the only limitation of the independent claims of the '311 patent that is arguably not disclosed by the Yilmaz Publication is “the substantially flexible substrate and the touch sensor are configured to wrap around one or more edges of a display” limitation of claims 1 and 7.

66. The limitation “the substantially flexible substrate and the touch sensor are configured to wrap around one or more edges of a display,” however, was expressly disclosed by the Joo Patent prior art reference discussed above.

67. Further, the limitation “the substantially flexible substrate and the touch sensor are configured to wrap around one or more edges of a display,” which ultimately resulted in allowance of the '311 patent, was not added to the claims of the application that led to the '311 patent until June 19, 2015.

*The Applicants Were Aware of the Yilmaz Publication*

68. On March 13, 2011, Scott Wornow, Senior Vice President and Chief Legal Officer at Atmel Corporation, signed a Power of Attorney to Prosecute Applications Before the USPTO granting Baker Botts L.L.P. power of attorney in the patent application that was published as the Yilmaz Publication (US 12/421,713).

69. On at least four separate occasions ((1) June 13, 2012; (2) August 17, 2012; (3) September 9, 2013; and (4) July 16, 2013), Chad D. Terrell of Baker Botts signed and filed amendments to the claims and/or remarks on the Examiner's Office Actions issued in U.S. Patent Application No. 12/421,713, including analysis of the subject matter contained within U.S. Patent Application No. 12/421,713 and the Yilmaz Publication.

*The Applicants Failed to Disclose the Yilmaz Publication*

70. The Yilmaz Publication was not disclosed to the USPTO by Chad D. Terrell (the prosecuting attorney of record who signed the filings on behalf of Atmel in both the application

that was the subject of the Yilmaz Publication as well as the application that led to the '311 patent), nor by Esat Yilmaz (the first named inventor on both the Yilmaz Publication or the '311 patent), during prosecution of the '311 patent, despite the individual duties of candor and good faith to the USPTO of Mr. Terrell and Mr. Yilmaz, including an obligation to disclose to the USPTO all information known to them that was material to the patentability of the '311 patent.

71. Indeed, on October 26, 2011, named inventor Esat Yilmaz signed a declaration stating that “I do not know and I do not believe” that the “subject matter which is claimed in and for which a patent is sought on the application entitled *Flexible Touch Sensor*” (the application that led to the '311 patent) was “described in any printed publication in any country . . . more than one year prior to the above-identified application.”

72. By October 26, 2011, Mr. Yilmaz’s own patent application (the Yilmaz Publication) had been published for more than a year and a half (published on February 25, 2010).

73. As discussed above in Paragraph 63, the Yilmaz Publication disclosed every limitation of the originally filed independent claims of the application that led to the '311 patent.

74. Upon information and belief, Applicants (and, in particular, Mr. Yilmaz and Mr. Terrell) failed to disclose the Yilmaz Publication prior art reference to the USPTO with the intent to deceive the USPTO.

75. Applicants’ withholding of the Yilmaz Publication prior art reference during the prosecution of the '311 patent is evidence of a pattern or plan to deceive the USPTO, and, standing alone, is independent evidence that inequitable conduct occurred.

\* \* \* \* \*

76. For at least the reasons set forth in Paragraphs 29 through 75 of its Counterclaims, Samsung is entitled to a declaratory judgment that the claims of the '311 patent are unenforceable.

**DEMAND FOR JURY TRIAL**

Samsung demands a jury trial on all issues that may be so tried.

**PRAYER FOR RELIEF**

WHEREFORE, Samsung respectfully prays for judgment and relief as follows:

- A. That Solas take nothing by reason of its Complaint, that the Complaint be dismissed with prejudice, and that judgment be rendered in favor of Samsung and against Solas;
- B. That Solas be granted declaratory judgment that Samsung has not infringed and is not infringing the '450 patent, the '338 patent, or the '311 patent;
- C. That Samsung be granted declaratory judgment that the claims of the '450 patent, the '338 patent, and the '311 patent are invalid;
- D. That Samsung be granted declaratory judgment that the claims of the '311 patent are unenforceable;
- E. That Samsung be awarded its costs and expenses incurred in this action;
- F. That Samsung be awarded its attorneys' fees in this action pursuant to 35 U.S.C. § 285; and
- G. For all other and further relief as the Court deems proper.

Dated: October 7, 2019

Respectfully submitted,

/s/ Melissa R. Smith

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**CERTIFICATE OF SERVICE**

The undersigned hereby certifies that counsel of record who are deemed to have consented to electronic service are being served today, October 7, 2019, with a copy of this document via the Court's CM/ECF system per Local Rule CV-5(a)(3).

/s/ Melissa R. Smith  
Melissa R. Smith